MANAGEMENT OF SCABIES OUTBREAKS IN CALIFORNIA HEALTH CARE FACILITIES

California Department of Health Services
Division of Communicable Disease Control
In Consultation with
Licensing and Certification

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CONTROL OF SCABIES OUTBREAKS IN CALIFORNIA HEALTH CARE FACILITIES

CONTENTS

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INTRODUCTION

In September 1997, the Department of Health Services (DHS), Division of Communicable Disease Control (DCDC) in consultation with the Licensing and Certification (L&C) Program published recommendations for the *Prevention and Control of Scabies in California Long Term Care Facilities* (LTCF). These recommendations were developed to provide a rational approach to the prevention and control of sporadic scabies in LTCF, thus avoiding outbreaks. Because of recent outbreaks of scabies in acute care facilities it was decided that more definitive recommendations for managing outbreaks was needed. These recommendations are intended to be advisory only, to assist healthcare facility infection control committees in the development of a rational approach for managing scabies outbreaks.

FINDINGS OF OUTBREAKS INVESTIGATED BY DHS

In the winter of 1999, six outbreaks of scabies have been reported to DHS, Division of Communicable Diseases and investigated by Licensing and Certification. In several large acute care hospitals, mass treatment of all employees was employed. This resulted in large expenditures for medication and significant utilization of staff time. During the investigations, several deficient practices were noted that could have, at least in part, been responsible for the transmission of scabies throughout hospitals. These deficient practices include failure:

1) to routinely report patients with signs and symptoms of scabies to the infection control practitioner;
2) of healthcare workers to wear personnel protective clothing such as gloves and long sleeve gowns when direct contact with a patient with signs and symptoms suggestive of scabies is anticipated;
3) to place patients with signs and symptoms suggestive of scabies in isolation until the infestation has been ruled out or treated;
4) of physicians and nurses to perform an assessment of the patient's skin on admission to the hospital;
5) to perform skin scrapings on suspect cases to confirm the diagnosis;
6) of healthcare workers to immediately report signs and symptoms of self-infestation;
7) to take immediate action when the threshold for a scabies outbreak has been reached;
8) to have a policy and procedure for investigating and controlling outbreaks.

TRANSMISSION OF SCABIES

Scabies infestations are generally categorized as typical, atypical or crusted/keratotic (Norwegian). Persons with typical scabies generally have fewer than 50 live mites on their skin at any given time. Therefore, typical scabies is difficult to transmit from patient-to-healthcare worker unless there is prolonged, unprotected skin-to-skin contact between the infested patient and the non-infested healthcare worker.

In contrast, persons with atypical or crusted scabies harbor hundreds to millions of mites in multiple skin burrows or in layers of crusted skin lesions. Healthcare workers who have unprotected skin-to-skin contact with any patient with atypical or crusted scabies will commonly develop scabies following exposure. Additionally any exposure to contaminated bedding such as sheets or blankets, pillows, clothing, lotions and creams, walking belts or upholstered furniture in close proximity to a patient with atypical or crusted scabies case may also be a source of transmission.

It may take as long as 2-6 weeks following exposure before symptoms of scabies infestation are apparent. If the healthcare worker has previously been infested, symptoms tend to develop much sooner, even within several days following exposure. During the incubation period the newly infested healthcare worker could be a source of transmission of typical scabies to other persons (patients, employees, visitors, volunteers, and family members). The probability of transmission increases over time and until the infested healthcare worker is identified and treated.

SCABIES PREVENTION AND CONTROL PLAN

All hospitals should develop, implement, and periodically evaluate a scabies prevention and control plan. This plan should include training all physicians, nurses, and other healthcare workers such as nursing assistants, technicians and students to recognize and report any patient with signs and symptoms compatible with scabies infestation. Additionally contact isolation precautions should be instituted until the diagnosis has been confirmed and appropriately treated or ruled out. If physicians, including dermatologists, are not proficient in diagnosing scabies and performing skin scrapings, then healthcare professionals such as laboratory technologists, the employee health, or infection control practitioner should be trained.

SCABIES OUTBREAK MANAGEMENT PLAN

Periodically, the scabies prevention and control plan will fail, patients will be admitted to the hospital with unrecognized symptoms of scabies infestation, and transmission will occur. For this reason, all hospitals should have a scabies outbreak management plan. The plan should be in writing, reviewed and approved by the hospital infection control committee, the executive committee of the medical staff, and the governing body at least every 3 years or when a change in personnel in the infection control or the employee health service takes place. The elements of the plan should be reviewed with all healthcare workers during new employee orientation and during annual review.

Designate Outbreak Coordinator

A professional familiar with the scabies outbreak control plan and knowledgeable about diagnosing and treating scabies should be designated as the outbreak coordinator. The authority to investigate, perform diagnostic procedure, and recommend appropriate treatment should be approved by the infection control committee, the executive committee of the medical staff, and the governing body.

Scope and Application

The scabies outbreak control plan should be applicable to all facility employees regardless of job classification. Additionally all staff physicians, contractual and registry personnel, students, volunteers, and visitors should be included in the plan.

INVESTIGATING A SCABIES OUTBREAK

Outbreak Definition

The primary goal of an outbreak investigation is to identify risk factors contributing to the outbreak and to take corrective action to prevent further transmission of scabies cases. An outbreak can be defined as an increase in the incidence of new cases above baseline within a defined period of time and within a defined geographical location (nursing unit, one floor or one wing, a department or, in some cases, the entire hospital). The purpose of developing a case definition is to estimate the magnitude of the outbreak. One definition of an "outbreak of scabies" in hospitals might be:

- Two (2) or more confirmed (positive skin scraping) cases of scabies identified in patients, healthcare workers, volunteers and/or visitors during a two (2) week period of time, or

- One (1) confirmed (positive skin scraping) and at least two (2) clinically suspect cases identified in patients, healthcare workers, volunteers and/or visitors during a two (2) week period of time, or

- At least two (2) clinically suspect cases identified in patients, healthcare workers, volunteers and/or visitors during a two (2) week period of time.

Confirm the Diagnosis

To confirm an outbreak of scabies, skin scrapings (Appendix A) should be performed on those healthcare workers, patients or volunteers who have symptoms of scabies infestation. Since patients with typical scabies are generally infested with relatively few mites at one time, confirmation of an infestation is difficult but should be attempted. At least 6 skin scrapings at different sites should be performed by a healthcare worker proficient with the procedure. If skin scrapings are negative and all other symptoms point to a scabies infestation it may be necessary to proceed with the investigation and control measures based on symptoms rather than a verified diagnosis.

If atypical or crusted scabies is suspected, at least one skin scraping should be done. If the first scraping is negative, scrapings should be done until at least 1 skin scraping is

positive for mites, fecal pellets, or eggs. Six negative scrapings in a patient with suspected untreated atypical or crusted scabies should lead to reconsideration of the diagnosis.

Data Collection

The infection control practitioner should develop a surveillance data collection form for specifically investigating the scabies outbreak. Those healthcare workers who report clinical signs and symptoms compatible with scabies should be interviewed as soon as possible by the infection control practitioner or other healthcare professional. As other symptomatic or exposed healthcare workers are identified they can be added to the data collection form.

The following data should be collected on all HCWs:

- Name of healthcare worker, physician, visitor, volunteer, registry nurse, student;
- Approximate date of onset of clinical signs and symptoms;
- What body site(s) are currently affected (hand, wrist, arm, truck, leg, etc.);
- Are household members or sexual partners currently symptomatic;
- What department or nursing unit is the healthcare worker routinely assigned;
- What nursing units or other departments has the healthcare worker rotated to during the past 8 weeks;
- Date the skin scraping was done;
- Results of the skin scraping;
- Recommended treatment;
- Date of treatment;
- Follow-up evaluations, and dates.

The following information should be collected on all patients who are diagnosed, clinically symptomatic or who may have been exposed to a scabies case:

- Patient's name;
- Room and bed number;
- Nursing unit or other service e.g., chronic dialysis;
- Date of admission;
- Nursing units transfers including emergency department;
- Date(s) of transfer between nursing units;
- Diagnostic and therapeutic services utilized (radiology, physical therapy, etc);
- Date of previous admission if within past 1-8 weeks;
- Symptoms (rash, pruritus, etc);
- Classified as typical, atypical, or crusted scabies;
- Date of onset of symptoms;
- Date of skin scrapings;
- Results of skin scrapings (positive, negative, or not done);
- Date of first treatment;
- Treatment (permethrin or ivermectin);
- Date of second treatment if recommended;
- Follow-up treatment and/or evaluation and dates;
- Family members or visitors contacted and offered prophylaxis.

REPORTING - COUNTY HEALTH OFFICER AND "THE DEPARTMENT"

All outbreaks should be reported immediately to both the local (county) health officer and to the Licensing and Certification District Office that serves the county where the facility is located. Reporting of outbreaks by Skilled Nursing Facilities is required by California Code of Regulations (CCR) Section 72539 (to local health officer) and by section 72541 (to Licensing and Certification - "the Department"). Reporting of outbreaks by acute care hospitals to the local health officer and to Licensing and Certification is required by CCR Section 70737. Reporting is critical given the number of outbreaks that have occurred and the potential for inter-facility transfer of patients during the outbreak period. Reporting also provides the opportunity for consultation with staff experienced in the control of scabies.

ACTIVATION OF THE SCABIES OUTBREAK MANAGEMENT PLAN

Notification of Key Personnel

Members of the infection control committee and hospital administration should be notified when activation of the scabies control plan is judged to be necessary by the infection control practitioner or the hospital epidemiologist. An emergency meeting should be scheduled as soon as possible to discuss strategies for implementing the plan. The meeting should include representatives from infection control, employee health, administration, nursing service, purchasing, pharmacy, central distribution, admissions, human resources and public relations. Other department representatives such as environmental services and the laundry should also be included at least at the initial meeting.

Staffing the Infection Control Department

Implementing a hospital-wide management plan is labor intensive. Professional and support staff should be diverted as necessary to assist the infection control practitioner.

Searching for Source or Index Case

The source or index case may be a current inpatient, a discharged patient, or a frequent clinic, dialysis or an emergency room patient. Occupationally, this person may be homeless, an affluent businessperson, or a healthcare worker. Scabies exposures occur without regard to the economic or social strata of the patient population served. Searching for the index case or cases will consume a great deal of time and, in the end, the true source case may not be identified. However, the effort is worthwhile since an unidentified case may continue to be a source, thereby continuing the outbreak in spite of prophylaxis.

Because investigations of these outbreaks are difficult, all healthcare professionals associated with the hospital (including physicians, nurses department or service directors and administrators) should do their part. A sample memorandum has been drafted to assist in coordinating the search for the source or index case (Appendix B2).

Protective Equipment Supplies and Pharmacy Supplies

Provisions should be made for obtaining additional personal protective equipment such as disposable, long sleeve gowns and gloves. The pharmacy should make arrangements for obtaining permethrin (Elimite) 5% cream. If ivermectin (Stromectol) is recommended as a scabies treatment option the pharmaceutical company should be notified and arrangements made for overnight shipping if necessary. The pharmaceutical company is Merck and they can be reached at (800) 672-6362 or fax (800) 637-2568.

Notification of Employees

All facility employees and non-employees such as temporary staff, volunteers, visitors, and students should be notified as soon as possible. Initially, a communication memo should be distributed to all departments (see example memorandum in Appendix B1). The memo should briefly describe what is known of the outbreak, the signs and symptoms of scabies infestation, and whom to contact immediately if the employee currently has signs or symptoms of infestation. It should be stressed that, initially, only employees who currently have signs or symptoms of scabies infestation should identify themselves. Employees who are not currently symptomatic should be informed of how, when and where to obtain prophylactic treatment as soon as those arrangements are made. A fact sheet with information on scabies in lay language should be distributed with the memo (see Appendix C as an example).

Continued communication with all hospital employees is very important. It may be necessary to update employees in all departments daily or at other appropriate intervals. Administration, nursing unit managers, and service directors should be briefed daily on the progress of the outbreak. These key people should maintain high visibility with employees until the outbreak is terminated. A telephone hotline or a computerized message may assist in maintaining the lines of communication with employees.

Notification of Current Hospitalized Patients and Visitors

All current hospitalized patients, family members and visitors should be notified as soon as possible that an outbreak is in progress. This communication can be accomplished with a memo distributed on a dietary tray, together with a fact sheet on scabies in lay language (Appendix C). The memo should briefly describe the outbreak, the symptoms, what control measures have or will be taken to confine and contain the infestation, a brief description of the treatment, if any, which the patient may expect and whom to call if there are questions. Additionally, patients should be notified at the time of discharge to report any symptoms of infestation to their attending physician.

Notification of Physicians

All physicians on staff should be notified of the scabies outbreak (see example memorandum in Appendix B3). Request physicians to assess their patients for clinical signs and symptoms of scabies infestation as soon as possible and to notify the nursing unit manager of any suspect cases. If a patient has clinical signs or symptoms of infestation, the physician should perform a skin scraping. If the physician is not familiar with this procedure, the hospital epidemiologist, staff dermatologist or other trained professional should be called to assist. The hospital epidemiologist should be consulted

for recommended treatment options. For patients who have severely contracted legs or arms and those who are ventilator dependent, treatment with permethrin may not be recommended. Physicians should also be alerted that, over the next 2-6 weeks, previously hospitalized patients might report symptoms suggestive of scabies infestation because of their possible exposure during hospitalization. These cases should be reported to the infection control department and treated with permethrin.

CONTROLLING THE OUTBREAK

Control of an outbreak involves a choice between treating only symptomatic cases and their known contacts or treating all possible contacts including asymptomatic patients, healthcare workers, volunteers, and visitors (mass prophylaxis). There is limited published information on which to base any recommendations. Treatment of only symptomatic cases and their identified contacts may result in silent, continuous transmission over a sustained period of time. As a result, retreatment of all or some of the cases may be required.

Analysis of the surveillance data collected on healthcare workers and patients who were diagnosed may assist the infection control committee in making the decision about what method of prophylaxis is most applicable to the situation. If the identified source patient was diagnosed with atypical or crusted scabies, has been hospitalized for many days or weeks, and has been transferred between several nursing units and diagnostic services, mass prophylaxis may be necessary. In this situation many employees in different areas of the hospital will begin to complain almost simultaneously of symptoms suggestive of scabies.

Limited (meaning confined to a specific area or areas) mass (meaning all those who work in those areas, not just those identified as contacts) prophylaxis should only be done if there is strong epidemiological evidence that the outbreak is confined to a specific unit or department. However, because healthcare workers and ancillary staff float from service to service and from nursing unit to nursing unit, treatment limited according to location may not terminate the outbreak.

Isolation of Patients

Most acute care hospitals follow the Centers for Disease Control and Prevention (CDC) isolation precautions for hospitals published in February 1996, and use contact isolation precautions for scabies patients. The Department of Health Services published recommendations for The Prevention and Control of Scabies in California Long-Term Care Facilities in 1997. These recommendations included extensive information about isolation of residents and may be adaptable, at least in part, to all types of healthcare facilities including acute care hospitals. Isolation of asymptomatic patients who are being treated prophylactically is not necessary. Only patients who have symptoms or have positive skin scrapings need to be placed in isolation. Patients with atypical or crusted scabies should be isolated until skin scrapings are negative or the signs and symptoms of infestation have abated.

Treatment Schedules

Once it has been determined whether limited or facility wide mass treatment is necessary, a treatment schedule should be defined. To prevent silent transmission of scabies, all those included in the treatment schedule should be treated in the same 24-hour treatment periods. If nursing units or departments are to be treated in succession it is best to limit rotating staff until all units have completed the treatment.

If possible, all patients should receive their initial treatment on the first or day shift. Healthcare workers who work the first shift can apply the topical medication to themselves and household contacts as soon as possible after they complete the first shift. Healthcare workers working the second or third shift should apply the topical medication before coming to work. Their household contacts should apply the topical medication before going to bed. All healthcare workers should wear gloves and long sleeve gowns for all patient contacts during the 24-hour treatment period. Gloves should be removed after each patient contact. Long-sleeve gowns only need to be removed when exiting an isolation room or if the gown becomes soiled with blood or other body fluids. Frequent reapplication of permethrin to the hands and wrists will be necessary after gloves are removed and hands are washed. Healthcare workers on the first shift should shower in the morning before coming to work. Patients who were treated on the previous day can be bathed or showered on the morning of the day following the treatment period. Healthcare workers who work the evening or night shift should also shower just prior to reporting for work.

Treatment Options

Effective treatment of scabies requires the application of a safe, effective scabicide. Until recently, the standard treatment was 1% lindane (Kwell). However, scabies mites have become increasingly resistant to this product and it is no longer recommended. Additionally, neurotoxicity has been reported in some patients following a single application.

Permethrin (Elimite) 5% Cream

The currently recommended treatment for scabies is 5% permethrin cream. When applied to the skin as directed, this product is approximately 90% effective after one application. Two applications may be required and is often recommended to assure complete eradication of atypical scabies. Multiple treatments may be required for the treatment of crusted or keratotic scabies. Permethrin has a low rate of side effects that may include burning, stinging or itching immediately following the application.

Animal studies have shown no adverse effects to reproductive function or to the fetus. However studies have not been done on pregnant women. Therefore permethrin should be used during pregnancy only if there is a clear indication for treatment. Breast-feeding should be discouraged during the treatment period. Permethrin is safe for children two (2) months of age of older.

Ivermectin (Stromectol)

Ivermectin is an antiparasitic agent that has been used extensively to treat onchoceriasis (river blindness) in Africa and also to treat strongyloidiasis (a roundworm intestinal infection). The drug is not approved (nor disapproved) by the U.S. Food and Drug Administration for use in the treatment of scabies; however, there is increasing

literature to support its use.[1-15] A single dose of 200 ug (0.2mg/kg (12 mg in a 60 kg patient) has been shown to be effective. A single dose in conjunction with karyolytic agents has been effective in the treatment of severe crusted scabies. Additional doses at two (2) week intervals have been used for severe crusted scabies in immunocompromised patients.

Rash and pruritus may worsen within the first few days following treatment with ivermectin. This is probably due to the release of allergens from dying mites. Limited information on the half-life of ivermectin in the blood suggests that the duration of protection from infestation after administration is short, e.g., less than a week.

Until further studies (of use in the elderly and as prophylaxis) are published, ivermectin can be recommended only for patients for whom the total body application of permethrin is impossible, e.g., ventilator dependent patients and those with severe contractures, and for those who have crusted scabies. However, its use in other patients might be considered.

EVALUATION OF CONTROL MEASURES

If scabies control measures, such as mass prophylaxis, have been successful an endpoint for the outbreak should be evident within several weeks. However cases can still occur as late as six (6) weeks following the last exposure. An epidemic curve or graph (histogram) in which known and suspected cases are plotted according to the date of onset of symptoms should assist in characterizing the outbreak. At the beginning of the outbreak many suspected or diagnosed cases in healthcare workers and/or patients will be clustered within a short time interval because the origin of the outbreak was, most likely, a single common source. However, because each subsequently affected healthcare worker or patient most likely became infested on different days, cases will be scattered over time until the last case is identified. If cases are still occurring several weeks following prophylaxis, either the source case was not identified, was not treated appropriately, or there is a new unidentified source(s) somewhere in the facility. If there are many suspected or diagnosed cases scattered throughout the facility, examination of the epidemic curve for each nursing unit, diagnostic or therapeutic service may provide more clues about the outbreak.

The Final Report

When the outbreak has been controlled (no cases for 1-2 incubation periods, or 6-12 weeks), the infection control practitioner should write a final report. This report should critically summarize the investigation, the control measures that were implemented, and the final outcome. If the cost of the outbreak can be estimated this should be included in the report. This report should be reviewed and approved by the infection control committee, the executive committee of the medical staff, and the governing body. Policies and procedures for the prevention and control of scabies should be reviewed and revised if necessary. Education of all staff including physicians should be done as soon as possible following the outbreak.

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APPENDIX A PROCEDURE FOR SKIN SCRAPING

A physician, nurse or other healthcare professional who has been trained to perform the procedure should only do skin scrapings.

A. Obtain the following equipment

Gloves and gowns
Slides and cover slips
Magnifying lens and light source such as goose neck lamp
Alcohol impregnated wipes
Felt tip pen (green or blue)
Clear nail polish
Mineral oil and dropper
Potassium hydroxide
Applicator sticks
Disposable hypodermic needles (18-20 gauge x 1.5-2.0 inches)
Surgical blade handle and # 15 surgical blade
Sharps container
Compound microscope (if available)

B. Procedure

1. Observe resident's skin with a magnifying lens and look for lesions suggestive of scabies infestation. The shoulders, back, abdomen, hands, wrists, elbows, buttocks, axillae, knees, thighs and breasts are common sites for burrows.

2. Using a hand held magnifying lens and a strong light, look for new burrows or papules. If the burrow or papule is very fresh, a tiny speck (mite) may be visualized at either end of the burrow or in the papule. The mite will not be found in excoriated, scabbed or infected skin lesions. Preserved, unscratched papules may sometimes be found in a grouping of scratched papules.

3. Visualize burrows using the "burrow ink test." This test requires a light source, magnifying lens and a black or green felt tip pen. After an unexcoriated, intact wavy, red line (burrow) is located, ink is rubbed directly over the suspect burrow. The ink is immediately and gently wiped off with an alcohol-impregnated sponge. After removing the excess ink, the remaining ink will appear as a black or green zigzag line under magnification.

4. Select an unexcoriated burrow or papule.

5. Prepare slides by dipping an applicator stick into mineral oil and transferring 2-3 drops to the center of several clean slides.

6. Dip a hypodermic needle into the mineral oil and transfer a drop of oil to the lesion selected for scraping and spread the oil evenly over the intended scraping site.

7. Hold the skin taut with one hand and hold the hypodermic needle at about a 5-10 degree angle with the other hand. If a surgical blade is used, hold blade at a 90-degree angle.

8. Apply light pressure and scrape the lesion making several movements across the lesion. Increase the pressure slightly while scraping. A small amount of blood may be visible; however, there should be no frank bleeding.

9. Transfer skin scrapings to prepared slide and place a cover slip over the scrapings.

10. Obtain at least 4-6 scrapings per resident.

11. Examine the entire slide preparation under low power magnification for evidence of mites, eggs or fecal pellets. If a compound microscope is not available at the facility, secure the cover slips with clear nail polish and transport slides to a clinical laboratory, physician's office, or local public health laboratory.

APPENDIX B1 SAMPLE MEMORANDUM TO STAFF MEMBERS

Date:

To: All Department Managers and Directors
All Employees

From: Department of Infection Control and Epidemiology

Subject: Scabies Outbreak

The infection control department is currently investigating an outbreak of scabies among our employees. To date three (3) healthcare workers assigned to patient care services (SNF/medicine/ER) and one (1) physical therapy aide have reported symptoms of scabies infestation confirmed by skin scrapings by the employee health service. These employees have been symptomatic for the past 2 weeks and perhaps longer. To date the index or source patient (or visitor) has not been identified. The incubation period for scabies is generally 2-6 weeks following exposure. The incubation period may be as short as 48 hours if the exposed person has previously been infested with scabies. Therefore patients, staff and volunteers may be incubating scabies without symptoms and can transmit the infestation to other patients, healthcare workers or volunteers.

Your Assistance and Cooperation are Urgently Needed

1. First, don't panic. Administration and the Infection Control Practitioner are doing everything possible, as soon as possible, to control the outbreak. We will communicate all necessary information and instructions to each department manager and employee as decisions are made for the implementation of a prophylactic treatment program of limited or wide scope. It may take several days to order and procure the necessary medications and supplies.

2. If you currently have symptoms of scabies infestation, please call the employee health service at extension ------- and schedule an appointment to be evaluated as soon as possible, preferably today or no later than tomorrow. The employee health service has extended the hours of operation from --------AM to ------PM for the next 3 days for your convenience.

3. The recommended treatment for nearly all scabies infestations is permethrin (Elimite) 5% cream. Please follow the instructions given to you by the employee health department when applying the cream. Those healthcare workers who are evaluated by the employee health service and given Elimite during the next 48 hours may require a second treatment.

4. If you have been diagnosed with scabies (positive skin scraping or a rash that is highly suspicious), it is likely that your spouse or sexual partner as well as all other household members are also incubating scabies and may already be symptomatic. If you **currently** have symptoms of scabies the employee health department will also supply you with enough Elimite to treat all your household contacts. Please follow the directions for application of Elimite to your household contacts.

5. If you are currently symptomatic and your schedule does not coincide with the employee health department hours, you can report to the emergency room for evaluation. If you report to the emergency room you may not be seen immediately, depending on the patients there and their problems.

6. The general symptoms of scabies infestation in healthy persons are as follows:

    - Skin lesions may resemble a rash on the hands, webs of fingers, wrists, elbows, knees, trunk, beltline, genital area or other generally loose areas of skin.
    - The lesions may appear as red, raised bumps (papules), pustules, or burrows (short, straight or wavy, raised lines that are pinkish to red in color) on the skin that are best observed with a magnifying lens.
    - Pruritus is generally intense especially at night under warm blankets.

Scabies is not likely to be transmitted from patient-to-patient except on nursing units such as the skilled nursing facility, psychiatric, or rehabilitation units. Because activities and socialization are encouraged on these units there is an increased risk for transmission in these units.

Hospital Epidemiologist

Infection Control Practitioner

Administrator, Patient Care Services

APPENDIX B2 SAMPLE MEMORANDUM TO MANAGERS

Date:

To: All Department Supervisory Personnel

From: Department of Infection Control and Epidemiology

Subject: Scabies Outbreak

We need your assistance in identifying the source or index case of scabies.

We believe that the source or index case for this scabies outbreak is an undiagnosed patient. This patient may have been discharged, or alternately, may be residing on any of the nursing units including the extended care units such as the skilled nursing facility, psychiatric unit, rehabilitation unit or chronic ventilator unit.

In elderly patients and those who are immunosuppressed because of prolonged illness, insulin-dependent diabetes, renal failure or advanced cardiac disease the symptoms of scabies infestation may differ substantially from those symptoms in normally healthy persons such as most of our healthcare workers. These symptoms include:

- A rash that may be difficult to see and may be non-specific.
- Pruritus may or may not be present. Also, pruritus of a chronic nature may be present, especially in those who are bedridden or who are confined to a wheelchair with blankets to keep them warm or are patients who wear multiple layers of clothes.
- The rash tends to occur where the skin is especially warm and moist. Therefore, the rash, papules, vesicles or other lesions may be more prominent on the back, sacrum, buttocks, backs of legs, in the finger webs, and under the breasts.
- Crusted or keratotic scabies, an advanced form of scabies, presents with scaling, crusted lesions. The lesions often appear on the hands, feet, fingernails and toenails and resemble crusted, thickened lesions that are similar to the calluses on the hands of a person who has worked in heavy construction for many years.
- In severely immunosuppressed patients such as those who have received steroids, the rash may only be slightly reddish, very fine and confluent and may cover most of or the entire skin surface.

Nursing Unit Managers and Charge Nurses on All Shifts

To assist the Infection Control Practitioner please comply with following instructions:

1. Instruct your staff nurses to **perform and document** in the progress notes a **thorough skin assessment of all patients** currently located on your nursing unit. Additionally, all newly admitted patients should have a skin assessment documented.

2. Using **tomorrow's daily census roster** that contains patients' names, medical record numbers, current location and admitting diagnoses please identify any patient with any type of a skin rash. If the rash carries a preliminary or confirmed diagnosis, please note that on the census roster beside the patient's name. **This information should be forwarded to the infection control office no later than noon tomorrow.**

3. If the patient with a rash has **been transferred to your unit** from another nursing unit please identify the unit or units and the date of the transfer.

4. Physicians should be notified of the rash and requested to evaluate their patients' on rounds tomorrow morning. Nursing unit managers should flag those charts of patients with rashes as a reminder to the physician to perform a thorough skin assessment. **Physicians will receive a memorandum regarding the outbreak in their mailboxes this afternoon.** All patients in the skilled nursing facility who are not evaluated by a physician on rounds tomorrow should be **evaluated by the medical director of that unit.**

5. At this time we do not feel that isolation is necessary for all patients with undiagnosed rashes. However, if after nurses and/or physicians have performed a thorough skin assessment and the **rash is highly suspicious for scabies, it is appropriate to place this patient in contact isolation precautions.**

6. If there is any healthcare worker who knows of **any patient who has been discharged and who had a rash consistent with scabies or was treated for scabies,** please add that name to the daily census roster to be submitted to me by noon tomorrow.

If you have questions please call my office at ---------- or beeper ----------.

Thank you for your assistance.

Hospital Epidemiologist

Infection Control Practitioner

Administrator, Patient Care Services

APPENDIX B3 SAMPLE MEMORANDUM TO STAFF PHYSICIANS

Date:

To: All Staff Physicians

From: Department of Infection Control and Epidemiology

Subject: Scabies Outbreak

Our medical center is currently investigating an outbreak of scabies among our healthcare workers. To date three (3) healthcare workers assigned to patient care services (SNF/Medicine/ER) and one (1) physical therapy aide have reported symptoms of scabies infestation confirmed by skin scrapings by the employee health service. These employees have been symptomatic at least the past 2 weeks and perhaps longer. To date the index or source patient (or person) has not been identified.

Your Assistance and Cooperation are Urgently Needed

Any physician who has developed any type of unexplained rash should report to the employee health service for evaluation. If you think you may have scabies and are treating yourself please notify either the infection control practitioner or the employee health service.

We believe that the source or index case for this scabies outbreak is an undiagnosed patient. This patient may have been discharged; alternatively, there is a possibility that this patient may be residing on one of our nursing care units such as the skilled nursing facility, psychiatric unit, rehabilitation unit, or the chronic ventilator unit.

A memo has been sent to all nursing managers instructing them to have a nurse perform a thorough assessment of the skin of all patients before 8 AM tomorrow morning. The nursing unit managers have been instructed to flag the medical charts of those patients with a rash for further assessment by their attending physicians.

If, after your assessment you think the patient has scabies:

- Notify the patient's primary care nurse or team leader.
- Write an order for contact isolation precautions.

Do not order treatment until you receive instructions from Dr_____ , the hospital epidemiologist. These instructions will be sent to you within the next two (2) days.

Schedules for implementing the treatment program are being developed. However it may take several days to order and procure the necessary medications and supplies to treat several hundred of our employees and patients. Additionally we would like to treat all healthcare workers and patients during the same 24-hour treatment period.

All healthcare worker requests for treatment of scabies should be referred to the employee health service.

Scabies

The incubation period for scabies is generally 2-6 weeks.
The incubation period may be as short as 48 hours if the exposed person has previously been infested with scabies. Therefore, patients, staff, and volunteers who may have been exposed may be incubating scabies without symptoms and can transmit the infestation to other patients, healthcare workers or volunteers.

The symptoms of scabies infestation in healthy persons are:

- Skin lesions on the hands, webs of fingers, wrists, elbows, knees, trunk, beltline, genital area or other areas of skin
- The lesions may appear as red, raised bumps (papules), pustules, or burrows (short, straight or wavy, raised lines that are pinkish to red in color) on the skin that are best observed with a magnifying lens.
- As the infestation progresses over a period of several weeks to months the rash may mimic other dermatological conditions such as eczema, impetigo, or drug reaction.
- Pruritus is generally intense, especially at night under warm blankets.

In elderly patients and those who are immunosuppressed because of prolonged illness, insulin-dependent diabetes, renal failure or advanced cardiac disease the symptoms of scabies infestation may differ substantially from those symptoms in normally healthy persons such as most of our healthcare workers.

- A rash that may be difficult to see and may be non-specific.
- Pruritus may or may not be present. Also, pruritus of a chronic nature may be present, especially in those who are bedridden or who are confined to a wheelchair with blankets to keep them warm or are patients who wear multiple layers of clothes.
- The rash tends to occur where the skin is especially warm and moist. Therefore, the rash, papules, vesicles or other lesions may be more prominent on the back, sacrum, buttocks, backs of legs, in the finger webs, and under the breasts.
- Crusted or keratotic scabies, an advanced form of scabies, presents with scaling, crusted lesions. The lesions often appear on the hands, feet, fingernails and toenails and resemble crusted, thickened lesions that are similar to the calluses on the hands of a person who has worked in heavy construction for many years.
- In severely immunosuppressed patients such as those who have received steroids, the rash may only be slightly reddish, very fine and confluent and may cover most of or the entire skin surface.

Thank you for your assistance.

Hospital Epidemiologist

Infection Control Practitioner

Administrator, Patient Care Services

APPENDIX C SCABIES FACT SHEET

What is scabies? Scabies is a contagious skin condition (infestation, not infection). It is caused by a very tiny insect called the "itch mite". These mites are about the size of a dot at the end of this sentence. They are grayish in color and nearly transparent in color.

The female scabies mite burrows or tunnels into the outer layer of skin in a thin red line about a half-inch long and then lays eggs. Such a burrow is usually very hard to identify. The first location is usually in the webs between the fingers or toes, around the wrist or the navel. It can also be found on the back of elbows, the folds of the armpits, the beltline and abdomen, about the creases of the groin, and on the genital organs. Small children, especially babies, often have involvement of the face, scalp, palms of the hands, or soles of the feet.

What are symptoms of scabies? The symptoms of scabies are an allergic reaction to the mites. There is usually an itching skin irritation and tiny reddened dots with surrounding redness or streaks of redness. Itching is usually worse at night. Persons who have never had scabies before usually notice symptoms about 4 to 6 weeks after their contact with someone with scabies. Persons who have had previous infestations of scabies develop symptoms sooner, often within a few days to 1 week.

How is scabies transmitted? The mite is generally transmitted from person-to-person by close body (skin) contact. Sharing clothing and bedding with infested persons can also spread the infestation. Shaking hands, holding, or clasping hands as in children's games can be a method of transfer. The mites do not survive more than a few days off the body.

How is scabies diagnosed? Scabies is diagnosed by looking at the rash with a magnifying lens. A doctor or nurse may also obtain small samples of scraped skin to look for the itch mite under a microscope.

How is scabies treated? Treatment usually consists of an application of a cream that must be prescribed by a doctor. **Always follow the directions provided with the medication.** It is put on the skin from the neck down, left on for about 12 hours (often overnight), and then washed off. After putting the cream on the skin you should out on clean clothes. The cream can be showered off the morning after the treatment. Itching may persist for 1-2 weeks after treatment. This does not mean treatment has failed but rather that reaction to the dead mite and its byproducts has continued for a while. Medication to reduce itching may be prescribed. Avoid scratching because the skin may become infected. Infection with bacteria of a scratched area may require treatment a well

How can the spread of scabies be prevented? Person with symptoms should be checked and treated by their doctor as soon as possible. Persons living in the same house and having skin-to-skin contact with someone with scabies should be treated at the same time to prevent scabies before symptoms develop. If you wait until symptoms develop, mites may already be transferred to other persons. Wash bedding, clothing, towels, and other bath linen that are used within 4 days before treatment in a washer using hot water and dry using the hot drier cycle. Clothing and items that cannot be washed should be stored in a closed plastic bag for one week.

This fact sheet is not intended to be used as a substitute for appropriate professional advice.